

Appln. No.: 10/707,775  
Docket No.: 140525/GEM-0093

### REMARKS / ARGUMENTS

At the outset, Applicant notes from the Final Action dated October 31, 2008, that Applicant's Amendments filed March 11, 2008, which first resulted in a Notice of Allowance, and then resulted in the Notice of Allowance being vacated, appear to have been entered into the case. Consequently, the listing of claims with amendments provided herewith are with the understanding that such prior amendments have been entered.

#### Status of the Claims

In the present patent application, Claims 1-4, 7-9, 11-18, and 20-22 are pending. Claims 21 and 22 are allowed. Claims 1-4, 7-9 and 11-18 stand rejected. Applicant notes that Claim 20 appears not to have been addressed. Applicant has amended claims 1, 9, 14 and 18. As such, Claims 1-4, 7-9, 11-18 and 20-22 are left for consideration. Applicant respectfully requests reconsideration of the claims in view of following remarks.

#### Rejections Under 35 U.S.C. §112, first paragraph

Claims 1-4, 7-9 and 11-18 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement, and as failing to comply with the written description requirement. More specifically, the Office Action considers the phrases "the portion of the plastic cord not having a non-plastic member attached thereto", and "the plastic tube not having a non-plastic member attached thereto across the chest of the person", to lack support from the original disclosure.

Applicant has amended Claims 1, 9, 14 and 18 to remove the above-noted language in question, thereby rendering these rejections moot.

In view of the foregoing and in further view of Applicant's remarks set forth hereinafter, Applicant submits that the pending Claims comply with all requirements under 35 U.S.C. §112, first paragraph, and therefore respectfully requests reconsideration and withdrawal of these rejections, which Applicant considers to be overcome.

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**Rejections Under 35 U.S.C. §103(a)**

Claims 1, 6, 9 and 14 stand rejected under 35 U.S.C. § 103(a) based on Ariav et al. (U.S. Patent Publication No. 2006/0087325, hereinafter Ariav), in view of Bowers (U.S. Patent No. 5,207,230, hereinafter Bowers).

Claims 4, 5, 10, 11, 17 and 18 stand rejected under 35 U.S.C. § 103(a) based on Ariav in view of Bowers, and in further view of Zomer (U.S. Patent No. 5,235,989, hereinafter Zomer).

Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) based on Ariav in view of Bowers and further in view of Rasche et al. (U.S. Patent No. 6,865,248, hereinafter Rasche), and in further view of Sontag et al. (U.S. Patent No. 6,298,260, hereinafter Sontag).

Applicant overcomes these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest *each and every element of the instant invention arranged in such a manner as to perform as the claimed invention performs*. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Additionally, Applicant respectfully submits that obviousness cannot be supported by a proposed modification that would render the prior art invention being modified unsatisfactory for its intended purpose. *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984); MPEP §2143.01.

**Regarding Independent Claims 1, 9 and 14**

Applicant respectfully directs attention to the claim language:

“...a plastic tube configured to be placed across a chest of the person, *the plastic tube being substantially transparent to x-rays*;

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a plastic cord having a portion that is disposed through an interior of the plastic tube, *the plastic cord being substantially transparent to x-rays*; and,

*a linear position sensor coupled to an end of the plastic cord*, the end of the plastic cord being configured to be disposed away from the chest of the person, *the linear position sensor generating a measurement signal indicative of an amount of linear displacement of the plastic cord during respiration by the person.*" (Claim 1);

"...disposing a plastic tube across a chest of the person, *the plastic tube being substantially transparent to x-rays*;

disposing a portion of a plastic cord through an interior of the plastic tube, wherein *a position sensor is coupled to an end of the plastic cord* and is disposed away from the chest of the person, *the plastic cord being substantially transparent to x-rays*; and,

*generating a measurement signal indicative of an amount of displacement of the plastic cord during respiration by the person utilizing the position sensor coupled to the end of the plastic cord.*" (Claim 9); and

"...a plastic cord that has a portion configured to be placed across a chest of a person lying on the tabletop, *the plastic cord being substantially transparent to x-rays*; and,

*a linear position encoder operatively coupled to an end of the plastic cord generating a measurement signal indicative of an amount of displacement of the plastic cord during respiration by the person*, the end of the plastic cord and the linear position encoder being configured to be disposed away from the chest of the person *outside a scanning area of the X-ray device.*" (Claim 14).

Here, Applicant is specifically claiming an apparatus and method that includes at least some of the following: *an X-ray transparent plastic cord* inside an *X-ray transparent plastic tube* with *a linear position sensor disposed at the end of the plastic cord*, *the sensor being outside a scanning area of the X-ray device and being the sensor that generates a measurement signal indicative of the amount of displacement of the plastic cord during respiration by the person.*

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Dependent claims inherit all of the limitations of the respective base claim.

In alleging obviousness of the claimed invention, Applicant submits that the Office Actions attempts to find individual claim elements within separate references, but fails to provide a reasonable rationale as to how those elements would be combined to perform as the claimed invention performs without rendering the prior art being modified unsuitable for its intended purpose.

At paragraphs [0012, 0014, 0015, 0016], for example, of the originally filed application, Applicant repeatedly states that the measurement system 10 includes a material that is substantially transparent to x-rays so that the structure of the measurement system will not be displayed on an x-ray image produced by an x-ray device 12.

Claims 1, 9 and 14, as noted above, include structure made of a material that is substantially transparent to x-rays so that the structure of the measurement system will not be displayed on an x-ray image produced by an x-ray device.

Accordingly, Applicant submits that an obviousness rejection must provide a showing of each and every element of the claimed invention and provide rationale for combining those elements to perform as the claimed invention performs, without rendering the prior art being modified unsuitable for its intended purpose.

Applicant submits that the combination of Ariav and Bowers, and the modification of Ariav in view of Bowers, fails to establish a prima facie case of obviousness.

First, Applicant looks to Ariav, and finds Ariav to disclose a sensor 50 including a body of soft elastomeric material 53 with a sonic transmitter 51 and sonic receiver 52 carried by the body in spaced relation to each other. The elastomeric body being arranged around the chest of a patient, and the transmitter/receiver being disposed to provide a measurement of respiration rate based on the changes in locations between the transmitter and receiver during respiration by the patient. (Abstract, paragraphs [0061] and [0080]). Here, Applicant finds Ariav, as also indicated by the Examiner, to be completely absent any disclosure of the sensor, body, transmitter and receiver, being substantially transparent to x-rays. In addition, Applicant finds Ariav to disclose and teach a sonic transmitter/receiver arrangement disposed midbody of a patient for sensing

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respiration by the patient, and to be completely absent any disclosure or teaching of "a linear position sensor coupled to *an end of the plastic cord*... the linear position sensor generating a measurement signal indicative of *an amount of linear displacement of the plastic cord* during respiration by the person."

Second, Applicant looks to Bowers, and finds Bowers to disclose a sensor 10 including a piezo-electric film transducer 30 having *metallized* inner and outer surfaces on a spiral tube 11 prepared by wrapping it on a mandrel 21 (Abstract, col. 4, lines 5-10, col. 5, lines 7-35). Here, Applicant finds Bowers not only to be completely absent any disclosure of the sensor being substantially transparent to x-rays, but quite to the contrary finds Bowers to be replete with discussion of a sensor having *metallized* inner and outer surfaces, which Applicant submits is wholly deficient in disclosing or teaching an x-ray transparent sensor arrangement. Furthermore, Applicant finds Bowers to disclose mechanical and electrical termination assemblies of the sensor 10 that include two stainless steel plugs 40 (col. 6, lines 22-26), which Applicant submits is also contrary the claimed invention being substantially transparent to x-rays.

In combining Ariav with Bowers, the Examiner fails to provide any rationale as to why one skilled in the art would make such a combination to arrive at the claimed invention when each reference taken separately and then in combination are completely absent any disclosure or teaching of a sensor arrangement, having elements arranged to perform as claimed, that is substantially transparent to x-rays. Simply stated, the Ariav sonic transmitter and receiver is at best questionably transparent to x-rays, which Applicant does not concede, and the Bowers metallized sensor surfaces with stainless steel plug connectors are at best likely to be productive of a foggy x-ray image artifact (not substantially transparent to x-rays).

Accordingly, Applicant not only finds Ariav and Bowers to be completely absent any teaching, suggestion or motivation to arrive at the claimed invention, but also to be completely absent any rationale for doing so when the end result is still not productive of a sensor that is substantially transparent to x-rays.

In addition, Applicant submits that if one skilled in the art were to modify Ariav with the teachings of Bowers, such a person would be left with an elastomeric band having a transmitter/receiver in spaced apart relationship (Ariav) with the elastomeric band being made



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from a spiraled elastomer having metallized inner and outer surfaces (Bowers). Such an arrangement falls wholly short of the structural features of the claimed invention, and Applicant respectfully submits that the Examiner has failed to show how each and every element of the claimed invention arranged to perform as the claimed invention performs can possibly result from the combination and teachings of Ariav and Bowers.

Furthermore, by modifying Ariav with Bowers, Applicant conjectures that such a modification would result in the transmitter and receiver of Ariav somehow being modified/replaced by the metallized transducer of Bowers, which appears to Applicant to be contrary to the teaching and purpose of Ariav (Ariav relies on a spatial separation and relationship between the transmitter and receiver). As such, Applicant submits that a modification of Ariav in view of Bowers as suggested by the Examiner would render Ariav unsuitable for its intended purpose (how does the metallized transducer of Bowers provide the same function as the transmitter/receiver of Ariav without wholesale restructuring of Ariav?).

In view of all of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what Applicant has done, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, fail to teach a modification to prior art that does not render the prior art being modified unsatisfactory for its intended purpose, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be overcome.

**Regarding Claims 4, 5, 10, 11, 17 and 18 in view of Ariav, Bowers and Zomer; and Claims 2 and 3 in view of Ariav, Bowers, Rasche and Sontag**

The subject claims are all dependent claims, and for all the reasons set forth above, Applicant submits that Zomer, Rasche and Sontag each fail to cure the deficiencies of Ariav and Bowers (absent any teaching, suggestion, motivation or rationale to arrive at the claimed sensor arrangement that is substantially transparent to x-rays).

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Accordingly, Applicant submits that a prima facie case of obviousness cannot be established.

Applicant has amended the claims for presentation in better form for consideration on appeal. The claim amendments should only require a cursory review by the Examiner as they only include language presented in earlier examined/allowed claims.

In light of the foregoing remarks and amendments, Applicant respectfully submits that the proposed amendments and arguments comply with 37 C.F.R. §1.116 and should therefore be entered, and with their entry that the Examiner's rejections under 35 U.S.C. §112, first paragraph, and 35 U.S.C. §103(a) have been overcome, and that the application is now in condition for allowance. Such action is therefore respectfully requested.

In addition, the amendments and arguments presented herein with respect to previously presented Claims 1, 9 and 14 have not been made to overcome the prior art, and therefore no presumption should attach that any of the claims have been narrowed or that subject matter or equivalents thereof to which Applicant is entitled has been surrendered. Moreover, no amendments as presented alter the scope of the claimed invention previously presented in earlier amendments and therefore cannot necessitate a new grounds rejection.

Notwithstanding the foregoing, Applicant notes that the present Office Action merely repeats verbatim the rejections of record in Paper No. 20071121 dated December 12, 2007, which itself does not address and could not have addressed the amendments and arguments of Applicant's Reply dated March 11, 2008. Under MPEP 707.07(f) Applicant is entitled to expect a full and fair examination of all amendments and arguments, which Applicant submits has not been established on the record. Accordingly, Applicant submits that the present finality of this Office Action is premature, and respectfully requests withdrawal thereof so that all prior amendments and arguments can be fully examined, and so that Applicant is afforded an appropriate opportunity to respond.

Furthermore, Applicant notes that Claim 20 has not been addressed in this Office Action. As such, Applicant again respectfully submits that the present finality of this Office Action is premature, and respectfully requests withdrawal thereof so that all prior amendments and

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arguments can be fully examined, and so that Applicant is afforded an appropriate opportunity to respond.

If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any remaining issues may be promptly resolved.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully Submitted,  
CANTOR COLBURN LLP

By /David Arnold/  
David Arnold  
Registration No. 48,894  
PTO Customer No. 23413

Address: 20 Church Street, 22<sup>nd</sup> Floor, Hartford, CT 06103  
Telephone: (860) 286-2929  
Fax: (860) 286-0115